

**State of California**  
**Green Action Team's Energy Efficiency Committee Report of**  
**Progress on Implementing the Green Building Action Plan**

*(as per detailed direction that accompanies Governor's Executive Order S-20-04)*

**Actions Overseen by the Energy Efficiency Committee**

*(Primarily focused on privately-owned commercial buildings, though many activities may also affect State buildings, local governments, and schools)*

- Green Action Team Energy Efficiency Committee convened a meeting of representatives of the public and investor owned utilities, building industry, consumer groups, state agencies and efficiency experts on September 16, 2005 to obtain input on actions needed to achieve the goals of the Green Building Action Plan.
- Responses and input provided by those participants, along with insights from two Real Estate Industry Leadership Council (REILC) meetings, were used to develop a survey to establish the priorities of actions and issue resolution was circulated November 2005 (summary findings attached).
- A joint meeting with REILC was held on December 8, 2005 to set a work agenda and assign task based on responses to the survey (attached).
- Sub-groups have been established to work on the priority tasks and report by Spring of 2006 on specific action items taken or needed for possible finalization by Summer 2006.
- The Energy Efficiency Committee work group will review the action plan from the AB 549 report Options for Energy Efficiency in Existing Buildings and guide the implementation efforts, seeking ways to accelerate reaching these milestones. For commercial buildings the recommended actions focus on benchmarking and commissioning.
- Utilities & REILC are collaborating with the Energy Efficiency Committee to identify effective methods and actions to train a labor force and promote voluntary commissioning of buildings.

Joint Meeting of

**Green Action Team's Energy Efficiency Committee**  
and  
**Governor's Real Estate Industry Leadership Council**

December 8, 2005

| <u>Participants</u> | <u>Association</u>                              |
|---------------------|---|
| Rachel McMahon      | CPUC  |
| Tim Tutt            | CEC   |
| Wally McGuire       | Flex Your Power                                 |
| Roy McBrayer        | SCSA/ DGS Green Action Team                     |
| Joyce Kinnear       | Silicon Valley Power                            |
| Stan Roualdes       | Shorenstein Realty Services and REILC           |
| Jackie Pfannenstiel | CEC   |
| Jeanne Clinton      | Consultant to EE Committee                      |
| Joseph Hsu          | SCPPA (City of Azusa)                           |
| Michael Paparian    | CalEPA  |
| Craig Sheehy        | Thomas Properties Group and vice-chair of REILC |
| Tom DeCarlo         | So Cal Gas (Sempra Utilities)                   |
| Jim Parks           | SMUD  |
| Daryl Mills         | CEC   |
| Grant Duhon         | PG&E  |
| Cliff Moriyama      | BOMA CAL and Calif. Business Properties Assoc.  |
| Carl Blumstein      | UC/CIEE   |
| Al Garcia           | CEC   |
| Claudia Orlando     | CEC   |
| Lorraine White      | CEC   |
| Scott Tomashefsky   | NCPA  |
| Brenna Walraven     | USAA Realty, BOMA International, and REILC      |
| Lillian Kawasaki*   | LADWP   |
| Gene Rodrigues*     | SCE   |
| Dan Emmett*         | Douglas, Emmett & Co. and chair of REILC        |

\* Attended by phone.

**Dec. 8, 2005 Joint Meeting of Energy Efficiency Committee and**  
**Governor's Real Estate Industry Leadership Council**

Top Priorities of Stakeholders

| <b>Rank</b> | <b>Work Task</b>   | <b>Points Received</b> |
|-------------|--|------------------------|
| 1           | Market assessment & plan for overall EE & green building strategy for commercial buildings | 42                     |
| 2           | Commissioning & retro-commissioning – guidelines, training, promotion, incentives platform | 26.5                   |
| 3           | Benchmarking – tool, data, roll out mechanism  | 25.5                   |
| 4           | Campaign to enlist EE commitment of building owners  | 20.5                   |
| 5           | Motivate O&M and no/low cost measures by “firming up” expected impacts to “count” savings  | 15                     |
| 6           | “Digging deeper” in EE measures – avoiding “cream skimming”                                | 12                     |
| 7           | Promise of mandatory measures in future, with strategies to gain voluntary actions sooner  | 10                     |

Briefings Desired on Additional Topics (**status, methods, activities, what else is needed?**)

- ☐ Quantifying EE's GHG benefits
- ☐ Getting predictable statewide program designs
- ☐ New financing mechanisms

## Overall Responses to the Survey

### Summary of EE Committee & RILC Member Recommended Priorities for Work Areas

| Action Stage             | Item Number | Possible Work Areas for Committee Focus   | # Nominations | Average Score of those Nominating | Total # points Received | Real Estate Industry points | Utility Rep points | Other Reps' points | Interests in Briefings |
|--------------------------|-------------|---|---------------|-----------------------------------|-------------------------|-----------------------------|--------------------|--------------------|------------------------|
| PLANNING & DEVELOPMENT   | P&D1        | <b>Market Assessment/ Planning-- overall strategy for EE &amp; green buildings.</b>                   | 9             | 4.7                               | 42                      | 5                           | 23                 | 14                 | 5                      |
|                          | P&D2        | Technology, systems, & other RD&D   | 2             | 2.0                               | 4                       | 0                           | 4                  | 0                  | 1                      |
|                          | P&D3        | Commercialization of new technologies   | 2             | 4.0                               | 8                       | 0                           | 8                  | 0                  | 1                      |
|                          |             |   |               |                                   |                         |                             |                    |                    |                        |
| DELIVERY Information     | D1          | <b>Benchmarking – tool, data, roll out mechanism</b>  | 8             | 3.2                               | 25.5                    | 12.5                        | 9                  | 4                  | 4                      |
|                          | D2          | <b>Campaign to enlist EE commitment of building owners.</b>   | 6             | 3.4                               | 20.5                    | 11.5                        | 0                  | 9                  | 5                      |
|                          | D3          | "Energy-Star-like" web site--practical info for owner/managers & beyond office buildings              | 4             | 2.1                               | 8.5                     | 4.5                         | 0                  | 4                  | 3                      |
|                          |             |   |               |                                   |                         |                             |                    |                    |                        |
| Diagnostics & Tools      | D4          | <b>Commissioning &amp; Retro-commissioning – guidelines, training, promotion, incentives platform</b> | 8             | 3.3                               | 26.5                    | 10.5                        | 9                  | 7                  | 5                      |
|                          | D5          | Model Leases for owners & tenants   | 2             | 1.0                               | 2                       | 1                           | 0                  | 1                  | 1                      |
|                          |             |   |               |                                   |                         |                             |                    |                    |                        |
| Training                 | D6          | D6 Training (&/or certification) of building operators  | 2             | 3.5                               | 7                       | 4                           | 0                  | 3                  | 3                      |
|                          |             |   |               |                                   |                         |                             |                    |                    |                        |
| Utility Program Design   | D7          | How to best meet needs of building owners & get uniform, predictable statewide program designs.       | 3             | 3.0                               | 9                       | 4                           | 5                  | 0                  | 4                      |
|                          | D8          | <b>"Digging deeper" in measures – avoiding "cream skimming"</b>                                       | 5             | 2.4                               | 12                      | 3                           | 4                  | 5                  | 4                      |
|                          | D9          | <b>To push O&amp;M and no/low -cost actions, "firm up" impacts to "count" savings</b>                 | 4             | 3.8                               | 15                      | 3                           | 12                 | 0                  | 5                      |
|                          | D10         | Reach tenants & leases to support EE  | 2             | 2.8                               | 5.5                     | 5.5                         | 0                  | 0                  | 1                      |
|                          | D11         | Integrating EE-DR-DG solutions for commercial buildings   | 2             | 1.5                               | 3                       | 0                           | 3                  | 0                  | 1                      |
|                          |             |   |               |                                   |                         |                             |                    |                    |                        |
| Incentives               | D12         | New financing mechanisms  | 3             | 1.3                               | 4                       | 0                           | 2                  | 2                  | 4                      |
|                          |             |   |               |                                   |                         |                             |                    |                    |                        |
| REGULATION/ MANDATES     | R1          | Sub-metering  | 1             | 2.5                               | 2.5                     | 2.5                         | 0                  | 0                  | 1                      |
|                          | R2          | Promise of mandatory measures in future & strategies to act sooner                                    | 4             | 2.5                               | 10                      | 1                           | 4                  | 5                  | 1                      |
|                          |             |   |               |                                   |                         |                             |                    |                    |                        |
| EVALUATION, MONITORING & | E1          | E1 Utility program EM&V   | 2             | 3.0                               | 6                       | 0                           | 0                  | 6                  | 1                      |
|                          | E2          | E2 Quantifying EE's GHG benefits  | 1             | 1.0                               | 1                       | 0                           | 1                  | 0                  | 5                      |
|                          |             |   |               |                                   |                         |                             |                    |                    |                        |
| OTHER                    |             |   |               |                                   |                         |                             |                    |                    |                        |
|                          |             | LEED Certification score improvements   | 1             | 5.0                               | 5                       | 5                           | 0                  | 0                  |                        |
|                          |             | Simplify utility program designs  | 1             | 1.0                               | 1                       | 1                           | 0                  | 0                  |                        |

### Suggested Work Task Objectives and Work to be Done

| Short Title<br>(in priority rank order)               | Description  | Issues   | Desired Outcomes  | Products/ Milestones Needed  |
|---|--|--|---|--|
| 1.<br>Commercial Building Sector EE Plan & Strategies | <p>Market Assessment/ Planning on overall strategy for EE and green buildings in commercial sector.</p> <p><i>Note: GBI Technical Back-up Paper available for reference</i></p> <p><i>Note: some comments want to tie this to eventual possibility (if triggered by insufficient EE achievement) or specific expectation of a mandate.</i></p> | <ul style="list-style-type: none"> <li>• Should there be an overall integrated one-stop GBI program?</li> <li>• If so, should this be statewide? How integrate IOUs and munis?</li> <li>• Scope: Should this focus on EE, or also try to integrate with DR and DG?</li> <li>• Focus on deployment, not on potential, which is already well documented, even if not perfect.</li> <li>• Incorporate strategies from all sides—building sector, utilities, state government</li> <li>• How much time and effort does this deserve? How can this be funded?</li> <li>• Coordinate this with information, outreach campaign, and educational activities (<i>discussed below</i>).</li> </ul> | <ul style="list-style-type: none"> <li>• Clear plan with consensus from wide range of stakeholders</li> <li>• Specific goals &amp; milestone targets</li> <li>• Assignment of government, utility, real estate industry roles &amp; strategies</li> <li>• Realistic funding plan</li> </ul> | <ul style="list-style-type: none"> <li>• Integration of knowledge from existing market assessments, program evaluation studies, and practitioner experience. Must include physical, economic, and attitudinal dimensions.</li> <li>• Scoping paper that lays out work to be done, possible time phasing, stakeholders committed or needed</li> </ul> |

| Short Title<br>(in priority rank order)   | Description  | Issues  | Desired Outcomes   | Products/ Milestones Needed   |
|---|--|---|--|---|
| 2.<br>Commissioning & retro-commissioning | <p>Real Estate folks would like to see findings/ recommendations reported in a document that becomes platform for qualifying for utility incentives for capital measures.</p> <p><i>Note: California Commissioning Collaborative already exists, comprising utilities, government, and building &amp; professional interests</i></p> | <ul style="list-style-type: none"> <li>• Definition of Cx and RCx – does NOT include identifying capital improvements or retrofits?</li> <li>• Methodology or scope ranges envisioned</li> <li>• Provider qualifications; can building engineers do this?</li> <li>• “Best Practices”</li> <li>• Is a specific tool needed?</li> <li>• M&amp;V, and attributing EE savings (<i>see “O&amp;M” below</i>)</li> <li>• Convincing owners &amp; managers of value; how to promote?</li> <li>• Guidelines on frequency of re-commissioning</li> <li>• Should Cx and RCx be included in Title 24 standards?</li> </ul> | <ul style="list-style-type: none"> <li>• Building owners and managers recognize importance and value of this function</li> <li>• Methodology and practice yield highly cost-effective results</li> <li>• Becomes routine practice among owners &amp; managers/operators</li> </ul> | <ul style="list-style-type: none"> <li>• Guidelines</li> <li>• Training of sufficient labor force</li> <li>• Public domain data resources</li> <li>• Promotion</li> </ul> |

| Short Title<br>(in priority rank order) | Description  | Issues   | Desired Outcomes   | Products/ Milestones Needed   |
|---|--|--|--|---|
| 3.<br>Benchmarking                      | <p>Becomes first step on path to implementation of EE.</p> <p><i>Note: This issue assigned by Executive Order to CEC; several workshops already held. Work plan and time schedule?</i></p> | <ul style="list-style-type: none"> <li>• Methodology</li> <li>• Using Energy Star and/or improved Calif.-version tool (how simple or sophisticated is the tool?)</li> <li>• California data base (quality, confidentiality)</li> <li>• Data for many building types</li> <li>• Time frame desired for widespread use of scoring?</li> <li>• Skill level of tool user – building operator or specialist?</li> <li>• Standardized report form or document for real estate sector use</li> <li>• How is this paid for?</li> </ul> | <ul style="list-style-type: none"> <li>• Single tool in widespread state or national use</li> <li>• Broad awareness of individual building scores</li> <li>• Benchmark used in a standard disclosure document at time of sale, similar to way “Probable Maximum Loss” Form 19 is used for insurance, seismic assessment.</li> <li>• Owners, buyers, sellers use in property evaluation</li> <li>• More commercial tenants specify or seek EE or green buildings</li> </ul> | <ul style="list-style-type: none"> <li>• Calif. revisions to existing Energy Star tool?</li> <li>• Calif. data base</li> <li>• Roll out mechanism</li> <li>• Promotion/ education strategy targeting property investors &amp; appraisers</li> </ul> |

| Short Title<br>(in priority rank order) | Description   | Issues   | Desired Outcomes  | Products/ Milestones Needed  |
|---|---|--|---|--|
| 4. Owner Commitment Campaign            | <p><u>Campaign to enlist EE commitment from building owners.</u></p> <p>Doing effective outreach, making sure senior RE management knows about financial and technical assistance programs.</p> <p><i>Note: CPUC was requested by Executive Order to ensure this occurred through ratepayer EE funding.</i></p> <p><i>Note: Flex Your Power has some activities. What about BOMA?</i></p> | <ul style="list-style-type: none"> <li>• Should efforts combine: <ul style="list-style-type: none"> <li>- campaign to owners/ asset managers with</li> <li>- education &amp; training to managers</li> <li>- operators/engineers?</li> </ul> </li> <li>• What organization(s) or constituency is/are best suited to deliver these messages? (BOMA, utilities, FYP?)</li> <li>• Can Calif. support multiple communication efforts, while avoiding confusion or wasteful duplication?</li> <li>• How link to supporting resources? (Calif., USEPA, or other web info, web tools, tenant communications)</li> <li>• How can this activity be funded?</li> </ul> | <ul style="list-style-type: none"> <li>• Communication campaign that is closely tied to other initiatives for <ul style="list-style-type: none"> <li>- overall sector plan,</li> <li>- benchmarking,</li> <li>- commissioning,</li> <li>- low/no-cost O&amp;M, &amp;</li> <li>- “digging deeper”</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Clear goals and measurable accomplishments to be targeted</li> <li>• Adequate market assessment to inform outreach campaign (targeting, messages, messengers, ...)</li> </ul> |
| 5. “Digging Deeper”                     | <p><u>“Digging deeper”</u> in the degree of EE measures obtained – avoiding “cream skimming”</p>  | <ul style="list-style-type: none"> <li>• Which measures need higher incentives?</li> <li>• Which should have lower incentives?</li> <li>• Can action be packaged, or are incremental steps from no &amp; low cost, then later higher cost items, inevitable?</li> <li>• What program designs or implementation techniques can obtain “deeper” actions?</li> <li>• How instill continuous energy management view? Mechanisms?</li> </ul>  | <ul style="list-style-type: none"> <li>• Restructuring incentive payments to reward longer-term payback measures, with without cream-skimming via too generous incentives for fast-payback measures</li> </ul>  | <ul style="list-style-type: none"> <li>• To be determined</li> </ul>   |



| Short Title<br>(in priority rank order)      | Description   | Issues  | Desired Outcomes   | Products/ Milestones Needed  |
|--|---|---|--|--|
| 6. Counting No/Low cost Impacts              | <p>Push <u>O&amp;M and no-cost</u> actions, but utilities reluctant to fund much since can't "count" savings very well from training or education/promotional strategies.</p> <p><i>Note: BOMA's BEEP program targets O&amp;M, so far on limited scale.</i></p> | <ul style="list-style-type: none"> <li>How to "firm up" the impacts from "soft" program approaches.</li> <li>CPUC acceptance of this type of activity and associated deemed or attributed savings methodology.</li> </ul>   | <ul style="list-style-type: none"> <li>CPUC adoption of method for attribution, and guidelines on expenditures</li> </ul>  | <ul style="list-style-type: none"> <li>Methodology for estimating savings</li> <li>Defensible M&amp;V data</li> <li>? Protocols for end user actions to assure persistence of savings</li> </ul> |
| 7. Mandate as Default for Low EE Performance | <p>Paint expectation of mandatory measures in future, with intervening tools (benchmarking) &amp; strategies (disclosure) to prompt many to act sooner.</p>   | <ul style="list-style-type: none"> <li>Should this be retained as a threat, or stated as a default strategy that will be activated for sub-par sector EE performance?</li> <li>What actions or EE measures might be "mandatory"?</li> <li>What would a threshold be for an EE shortfall that triggers this?</li> <li>What is the trigger event for an individual building?</li> <li>Legislative action needed.</li> </ul> | <ul style="list-style-type: none"> <li>Advice on threshold for possible or definite application of default mandate.</li> <li>Consensus on minimal action that might be expected by individual building owners</li> </ul> | <ul style="list-style-type: none"> <li>To be determined</li> </ul>   |

## Actions Implemented by the California Energy Commission

| Executive Order Directive  | Status & Outlook   | Timetable  |
|--|--|--|
| <b>2.2. CEC Focus: Building Benchmarking and Commissioning</b>   |  |  |
| 2.2.1. Optimize all California building efficiency <b>20 percent by 2015</b> through benchmarking and commissioning activities.                | GAT Energy Efficiency Committee convened 9/05. Joint meeting with REILC 12/05 to set work agenda and task assignments.   | Interim work products to be requested by March and June 2006.  |
| 2.2.2. Propose by July 2005 a simple building efficiency <b>benchmarking system</b> for all commercial buildings in the State.                 | CEC adopted Energy Star benchmarking system 9/05.<br><br>Staff work underway for an improved Calif. data/tool in coordination with US EPA Energy Star.   | <u>Milestones<sup>1</sup></u> :<br>Decision on Calif.-specific tool Q1 2006<br><br>Revised Energy Star system expected in August 2006.   |
| 2.2.3. Develop <b>guidelines and standards for commissioning</b> activities.   | Technical aspects already developed by CA Commissioning Collaborative (utilities, agencies, and private sector).<br><br>Draft guidelines for commissioning existing buildings and for general commissioning completed and under review.<br><br>Incorporated into some utility EE programs for 2006-08. | Final guidelines completed by February 2006.<br><u>AB 549 Report Milestones</u><br>Training of work force: ongoing; may need to expand.<br>Utility incentive programs: 2006<br>Promotion: 2008 coordinated w/ benchmarking |
| 2.2.4. Prepare and submit to the Governor's office by July 2005 a plan, timetable and recommendations to <b>accomplish benchmarking</b> of all | 2 CEC-led deployment planning workshops held in 2005 with utilities and stakeholders.  | Next workshop 1/23/06.<br><br>CEC staff expects an overall deployment and  |

<sup>1</sup> from CEC's AB 549 Report 12/05 & Committee Benchmarking Report 9/05.

| <b>Executive Order Directive</b>   | <b>Status &amp; Outlook</b>   | <b>Timetable</b>   |
|--|---|--|
| commercial and public buildings in California, including benchmarking at the time of sale, as well as a system by which benchmarking ratings can be disclosed to tenants, buyers, and lenders to advise them in making decisions.  | Negotiations focused on ensuring explicit inclusion in utility 2006-2008 programs and provision of funding with CPUC agreement.   | <p>funding plan by spring 2006.</p> <p><u>AB 549 Report Milestones</u></p> <p>Integrate into 2006-08 programs: 2006</p> <p>Use to target poor-performing buildings: 2007</p> <p>Provide automated benchmarking to all buildings: 2008</p> <p>Require when financing commercial buildings: 2009</p> |
| <b>2.3. CEC and State Licensing Boards – Standards and Enforcement</b>   |   |  |
| 2.3.1. Develop and consider adoption of <b>building code amendments</b> to ensure that:  | Ongoing   |  |
| 2.3.1.1. All proven, cost-effective, and achievable energy and resource efficiency, health and safety technologies and design practices are considered and employed in new non-residential buildings, with the goal to increase efficiency by 20% by 2015 compared to the standards adopted in 2003. | <p>2005 standards adopted and became effective as of October 2005.</p> <p>2008 Building Standards proceeding initiated.</p> <p>Additional proceedings will result in new standards to take effect in 2011 and 2014.</p> | 2008 Building Standards scoping meeting held in November 2005.   |
| 2.3.1.2. Standards capture increased energy and resource savings and applicability for the building floor space that annually undergoes  | Adopted standards apply to additions and alterations to existing buildings.   | Ongoing.   |

| Executive Order Directive   | Status & Outlook   | Timetable |
|---|--|-----------|
| <b>renovation, and at specified points in the life of existing buildings;</b>   |  |           |
| 2.3.1.3. Commissioning and other approaches ensuring <b>the achievement and persistence</b> of efficiency are incorporated into the building and appliance standards.   | Standards include “acceptance requirements” that specify how equipment that is prone to installation defects must be commissioned/tested before building occupancy.  | Ongoing   |
| 2.3.1.4. <b>Training and fee-based private-sector delivery of commissioning</b> services is available in California.  | <p>Providing training to building officials, designers, architects and contractors on acceptance test for new and changeout air conditioners and lighting controls and delivery of commissioning services through the California Commissioning Collaborative contract.</p> <p>Existing buildings: issue being addressed in 2.2.3 above</p> | Ongoing.  |
| 2.3.1.5. Strengthened standards are adopted or updated beginning in 2006.   | See above.   |           |
| 2.3.2. Undertake, along with the building and construction industry State Licensing Boards, an expanded standards <b>enforcement</b> effort. This should include tools to aid building officials, communication with equipment marketers, and assurance by the State licensing boards that licensed-contractors | <p>MOU with the Contractors State License Board signed June 2006 to work collaboratively to encourage contractor compliance.</p> <p>Working with the Collaborative, produce four outreach documents</p>  | Ongoing.  |

| <b>Executive Order Directive</b>  | <b>Status &amp; Outlook</b>  | <b>Timetable</b> |
|---|--|------------------|
| comply with the standards.  | for licensed contractors, related to changes in the 2005 building standard update. |                  |
| <b>2.4. New Tools and Strategies</b>  |  |                  |
| 2.4.1 The CEC shall complete its <b>report required by Assembly Bill 549</b> (Statutes of 2001) and submit this to the Governor's Office and Legislature by October 2005. | Adoption by CEC Dec. 14, 2005, for submission to Governor's Office and Legislature | December 2005    |

#### **Additional Support to GBI Activities provided by CEC**

- CEC staff has provided assistance and technical guidance to other working groups and sub Committees on a variety of topics which include:
  - Finance and Execution Committee
    - Selection & development of Life Cycle Cost Model
    - Identifying financing mechanism for EE projects for state facilities (similar to CEC's Loan Program)
    - Consulting with DOF on contracts and model implementation.
  - Green Building Committee
    - Selection of technical resources and guidelines that will enable schools built with state funds to be resource and energy efficient
  - CEC has technical assistance and Loan programs to assist local governments and schools.
    - Provided \$3.5 million in 10 new loans to local governments and school districts over the 1st year of GBI with nearly \$6 million more in progress to be loaned during 1st quarter of 2006.
    - Provided 17 energy audits and design reviews for local government and school districts since the Executive Order was signed.

- The Commission technical assistance and Loan programs are authorized through 2011 with any extension requiring approval of the legislature. We anticipate that these programs will provide up to \$120 million in additional funding for projects by 2011.
- Working with EPA to set up a tracking method for counting the number of buildings benchmarked using portfolio manager. In 2005, 846 California buildings representing approximately 165 million ft<sup>2</sup> were benchmarked using portfolio manager.